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ABSTRACT

This report presents a description and evaluation of the Cognitively Oriented Urban Prekindergarten Program in West Chester, Pennsylvania, a preschool program for children from low income families and/or one-parent families. The program was designed to form a link between the Early Learning Program of the PRIDE Project and public kindergarten. Children were assessed and grouped homogeneously according to ability. Teachers were responsible for curriculum development and revision and communication with parents. Children participated in activities from two curriculum sections: the general curriculum (including perceptual development activities, conceptual-language development activities, art education, and physical education) and the academic curriculum (reading, mathematics, science, social studies, and health and safety activities). Extensive descriptions of these curriculum areas, as implemented in the program, are provided. A comparison of the 1974-75 year of program operation to the two previous years of operation is included. The results of an assessment of strengths and weaknesses of the program as perceived by teachers and as shown by testing of the children are provided. (BRT)

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THE COGNITIVELY ORIENTED PREKINDERGARTEN

AN ESEA TITLE III THIRD YEAR FINAL REPORT

By

Russell A. Dusewicz

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October 1975

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The success of the Cognitively Oriented Urban Prekindergarten Program is owed in large measure to the progressive orientation of the West Chester Educational Development Center and its director, Dr. Everett A. Landin; the cooperative participation of the Learning Research Center at West Chester State College and the Division of Research at the Pennsylvania Department of Education; and the dedication, hard work and long hours of the two Prekindergarten Program teachers, Miss Shirley Grice and Mrs. Patti Roberts. Special appreciation is expressed to Mrs. Linda McNally, Miss Christine Stetler and to the West Chester State College undergraduates who assisted in the operation of the Prekindergarten. Appreciation is also extended to Mrs. Gerrie Bellam and Mrs. Delphine Reitz for their considerable efforts in the typing and preparation of this work. In addition, the cooperation of the administration of West Chester State College and the Community surrounding it as well as the parents of the participating children played no small role in making possible the accomplishments achieved to date by the program.

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PROGRAM OPERATION

General Description

The Cognitively Oriented Prekindergarten was conducted at the Learning Research Center on the West Chester State campus during the 1974-75 school year. The program was operative from September through May and was conducted in two sessions. The children attending the morning session of the Prekindergarten program had participated in the home program phase of the PRIDE Project for two years. These children had been tutored by undergraduate teacher assistants for a period of 45 minutes twice weekly as participants in the home program. The population of the afternoon session of the Prekindergarten was derived from the center phase of the PRIDE Project. These children had participated in the center program for two years and had attended half-day sessions at the Learning Research Center, Monday through Friday. During the 1974-75 school year, both the morning and afternoon sessions of the Prekindergarten used a single classroom facility in the Learning Research Center. Both sessions operated on a daily schedule, Monday through Friday, for a time period of approximately two and a half hours.

Participant Profile

Forty children participated in the Cognitively Oriented Prekindergarten during the 1974-75 school year. Eighteen children attended the morning session of the Prekindergarten program and twenty-two children attended the afternoon session. The ages of the children ranged from 35 to 45 months at the beginning of the school year in September. The median entrance age was 41 months. There were eleven girls and twenty-nine boys.

In each of the children's homes there was an average of 1.9 siblings. This average was determined from the total number of siblings in the home at the time of entry into the Prekindergarten program, rather than from the number of siblings at the time of initial enrollment in the PRIDE Project.

Eighteen children came from single-parent homes. Twenty-two children came from two-parent homes. Because almost 50% of the families were of the single-parent type, it was assumed that these single or separated mothers would have the greatest influence on their young children. Therefore, additional information was gathered on the mothers themselves. The median age for all mothers at the time of their child's enrollment in the Prekindergarten program was 26 years. The age range for the mothers whose children were participants extended from 17 years to 39 years.

During the past two years of operation, almost all the children participating in the Prekindergarten program were from low-socioeconomic backgrounds. During the 1974-75 year of operation, seventy percent of the children were from low-socioeconomic backgrounds. The remaining thirty percent were classified as coming from middle-income families. The source of income for forty percent of the families was the Department of Public Assistance.

Staffing

The staff for the Prekindergarten program included a supervising teacher, an associate teacher and several part-time undergraduate student assistants (approximately equivalent to one full-time student aide). Both the supervising teacher and associate teacher held B.S. degrees in elementary education and were completing courses for their Master's degrees in

the same field at the end of the school year. The student assistants, many of whom were studying for a degree in education, were employed through the work-study program on the campus of West Chester State College. Student assistants assigned to the Prekindergarten by the work-study program worked cooperatively with the supervising teacher and the associate teacher. Student assistants were assigned work hours according to their class schedules. An average of one student assistant was assigned to the Prekindergarten for each hour the program was in session. These student assistants were responsible for carrying out certain curriculum activities as well as classroom management activities, such as general clean-up. From time to time, volunteer aides participated in the program, helping to carry out various classroom responsibilities such as snack preparation and assisting in art projects.

Program Development Implementation

Operation of the Prekindergarten program involved numerous teacher responsibilities for program development and implementation. The supervising teacher and associate teacher were responsible for curriculum development and revision. Although a thorough and effective organization of the Prekindergarten curriculum occurred during the 1973-74 school year, curriculum development and evaluation continued during the 1974-75 year of operation. This was done to accomodate the unique needs of the children participating in the program. Curriculum revision, particularly in the area of reading instruction produced a more effective instructional procedure. Continuous review and evaluation of activities and materials designed to implement program objectives took place throughout the school year.

The Prekindergarten staff teachers were also responsible for planning the instructional program. This included long-range scheduling of activities within the various curriculum areas, as well as daily lesson preparation. The teachers worked cooperatively to implement the program in the prekindergarten classroom.

The Prekindergarten teachers carefully observed, assessed and grouped the children homogeneously according to ability. They were, subsequently, responsible for revising the daily schedule when necessary in order to assure the maximum performance level of each individual child. When planning the daily instructional program, the teachers also had to supervise and delegate classroom responsibilities to the undergraduate student assistants according to their work schedules and individual teaching abilities.

Arrangement of the physical learning environment was an additional classroom responsibility. The teachers carefully planned the classroom environment to provide opportunities for individual and small and large group instruction. The physical layout of the classroom was designed to motivate the children's learning and to stimulate their curiosity. Materials were organized and labeled to insure efficient program operation.

In addition to working cooperatively in developing and revising the curriculum, the supervising teacher and associate teacher also reviewed and evaluated instructional media appropriate to the Prekindergarten curriculum. The teachers were concerned with ordering commercial materials, making arrangements to borrow materials from the library and curriculum laboratory at West Chester State College, and supervising the construction of project-made materials to meet the objectives of the program.

Successful implementation and overall acceptance of the program were maintained by teacher-parent correspondence. Communication was established in the form of a newsletter designed to inform the parents about activities and subject matter being presented to their children. Frequent phone interviews provided a means of relating information to parents concerning the progress of individual children. Parents were invited by the teachers to observe the program at any time and to offer comments and ask questions.

The staff was also involved in interviewing drivers for the Prekindergarten. Mapping and practicing pick-up, drop-off routes were operational responsibilities. The teachers and drivers were also concerned with maintenance of the rented vehicle used for transporting the children.

Arranging for the delivery of milk and food for the program was another responsibility of the teaching staff.

The Prekindergarten teachers established a line of communication with other staff members at the Learning Research Center. The librarian and school nurse allowed the Prekindergarten staff to borrow available materials when requested. This line of communication with other staff members allowed the teachers to arrange for the Prekindergarten children to participate in various school functions, thus expanding their background of experiences.

Daily Instructional Program

The Cognitively Oriented Prekindergarten was designed to form an important link between the Early Learning Program of the PRIDE Project and the kindergarten level of the formal school system. Thus one of the major objectives of the Prekindergarten was to resist educational regression of those gains exhibited by the children after the completion of two years in

the Early Learning Program. At the same time, the Prekindergarten was designed to extend those gains previously attained by the children. In this regard, the other principal objective for the participating children was the successful demonstration of a final level of development at or above the normal level for children of the same age. Attainment of these objectives would enable the children to compete more effectively with children from more advantaged homes in the public school system. This educational development was fostered within the framework of the daily instructional program.

The emotional climate of the classroom environment was much the same as that established during the previous years of operation. A feeling of mutual trust and respect was created among teachers, children and parents. The children were encouraged to develop their individual abilities and interests to the fullest and to cooperate with one another in carrying out classroom responsibilities.

In the Cognitively Oriented Prekindergarten, the children participated in activities designed to meet learning objectives in the areas of intellectual development, language development, social development, reading achievement and mathematics achievement. The program activities were divided into two complementary sections: the general curriculum (daily activities, perceptual development, conceptual-language development, art education and physical education) and the academic curriculum (reading, mathematics, science, social studies and health and safety). The daily activities schedule incorporated portions of both curricula on a regular basis. Some of the program activities incorporated into the 1974-75 curriculum were carried over from previous years, others were revised or added to meet the

needs and levels of development of the prekindergarten children. These program activities were performed individually as well as in large and small group situations. In this way, the activities served to develop both the children's personal self-concepts as well as their social skills and relationships.

The following list of activities will serve as description of the daily activities schedule for both sessions of the Prekindergarten program, and they are presented here in the sequence in which they normally occurred:

1. Hanging Up Outdoor Clothing

   The children were responsible for hanging up their outdoor clothing as they entered the room each day. They were provided with individual hangers with their names printed on them. This activity helped reinforce the children's identification of their printed names. It also aided the children in developing social responsibility skills.

2. Free Play

   Following the task of hanging up their outdoor clothing, the children then participated in a free play situation. Various materials and activities were displayed about the room to which the children could direct themselves. The materials and activities were carefully structured by the teachers to meet the needs of the children and to reinforce the instructional objectives of both the general and academic curricula. Materials used at this time included puzzles, sorting boxes, lottos, dolls, cars and trucks, play kitchen, sand and water table and art materials.

3. Clean Up

The children were signaled by the teachers to clean up the classroom after free play. They were responsible for placing all materials used during free play back in their proper locations in the room. The children worked together until the task was completed.

4. Music Time

Although musical activities were incorporated into other portions of the instructional program, music time provided the teachers with an opportunity to present specific concepts and activities in this area. Activities included singing, playing musical instruments, quiet listening, rhythmic movement and dancing. Music time also served to bring the children together at the beginning of the day and to introduce them to the activities of the day.

5. Busy Bees

This activity involved assigning various classroom tasks to the children on a weekly rotation basis. At the beginning of the week, certain children were assigned "busy bee" duties such as setting the table for breakfast and snack, and feeding the fish. These children were responsible for performing their assigned tasks for a week. The next week different children were designated as "busy bee" helpers. The children took pride in carrying out their individual responsibilities.

6. Breakfast and Snack

Only those children in the morning session of the Prekindergarten were given breakfast, although the children in both sessions

received snack. Breakfast and snack times provided opportunities for the children to converse casually with one another. At the same time, the children experienced new foods and the teachers introduced concepts such as classification of foods as fruits or vegetables when appropriate. The children were responsible for clearing their dishes from the table after they finished eating.

7. Library Time

As the children finished eating, they went to the library corner and selected a book. They looked at the pictures independently or asked a teacher or aide to read the story to them. The children explored novel concepts and obtained new information through books. This portion of the day aided the children in developing listening skills and story comprehension skills.

8. Small Group Sessions and Major Academic Areas

Three small group sessions were conducted at this time: one for reading instruction, another for mathematics instruction and the third for instruction in the areas of perceptual and conceptual-language development. The children were grouped homogeneously according to ability for small group instruction, although the groupings were flexible based on the children's interests and levels of development. The three groups of children rotated simultaneously to the various activities until all three groups participated in each of the three small group sessions.

9. Calendar and Weather Activities

These daily activities were performed in a large group situation. Each day the children identified the month, the day's date

and the day of the week. The children took turns placing the date card in its correct place on the calendar. They also made daily observations of weather conditions and took turns placing the arrow attached to the weather chart on the picture representing the observed weather condition.

10. Physical Education Activities

Following the completion of the daily calendar and weather activities the children participated in physical education activities. These activities were designed to promote the development of muscular strength and dexterity. Activities included walking, running, skipping,jumping and hopping. Hand-eye coordination skills were also developed in activities such as target throw and ring toss games. By fostering the development of these various physical coordination skills, the program enabled the children to interact more actively in physical play activities.

11. Minor Academic Subject Areas

After the physical education activities were completed, the children sat at the tables for snack time which was described previously. As the children finished eating, they gathered on the circle in the center of the room. Large group instruction in one of the three minor academic subject areas was conducted at this time. The three subject areas included science, social studies, and health and safety. Science instruction involved the manipulation of real objects and subsequent development of abstract concepts and relationships. In the area of social studies, the children were introduced to the various roles of

their family members and members of their community. They were encouraged to identify the importance of their roles with respect to their families and community. A major portion of the health and safety curriculum was devoted to the development of positive self-concept and personal grooming responsibility on the part of the children. All three areas of instruction applied the philosophy that children learn by doing.

12. Enrichment and Reinforcement Activities

This portion of the daily activities schedule was designed to give the children an opportunity to unwind at the end of a busy day. At the same time, many of the activities were presented to reinforce the learning that took place throughout the day. Enrichment activities included various aesthetic experiences such as arts and crafts and creative dance. Activities designed to reinforce ideas introduced throughout the day included viewing movies, taking walking tours, and listening to stories. These activities served as an appropriate means to end a busy day in the Prekindergarten.

Comparision of Third Year Operation to Previous Years

A comparison of the 1974-75 year of operation of the Cognitively Oriented Prekindergarten to the two previous years of operation indicated several important differences.

Data collected on participating children indicated distinct differences. Forty children were enrolled in the Prekindergarten Program during the 1974-75 school year, the highest enrollment for the three years of operation. Thirty children participated during the 1973-74 school year; thirty-five during

the 1972-73 school year. At the start of the 1974-75 year of operation, the age range for the participating children was 35-45 months. Thus the children attending the third year of the program were younger than those participating in the two previous years of operation. The age range was 37-51 months for the 1973-74 school year and 42-51 months for the 1972-73 school year. The 1974-75 year of operation was the first year that the number of boys enrolled was greater than the number of girls enrolled.

The family backgrounds of the children participating in the 1974-75 school year of the Prekindergarten also differed from those of previous years. For the first time, the number of children from two-parent homes was greater than the number of children from single-parent homes. In addition, thirty per cent of the children came from middle income families. During previous years of operation, almost all the children came from low-socioeconomic backgrounds.

This mixture of children from both low and middle socioeconomic levels in the 1974-75 group of Prekindergarten participants was instituted for several reasons. First it was done in an effort to investigate the effects of heterogeneous grouping upon student achievement. Second, an investigation of the range of effect of the program across socioeconomic levels was needed in order to be able to make informed recommendations to other local educational agencies regarding adoption of the program.

Instructional procedures in the academic areas of reading and math were revised for the 1974-75 year of operation. Reading instruction was revised by introducing new words in the context of three-word phrases. During the 1973-74 school year, many reading words were introduced singly and were combined into phrases only after the children could identify approximately twenty words.

The new procedure used during the 1974-75 year of operation aided the children in developing comprehension skills and, at the same time, served as a means of continually reinforcing previously learned reading words. Math instruction was revised to give each child more individual learning time. The staff teachers arranged the daily schedule to insure each child an opportunity to work one-to-one with a teacher in the area of math instruction. In this way, each child progressed at his own rate of speed. This also enabled the teachers to keep more accurate progress and evaluation records.

The number of students employed through the work-study program of West Chester State College for the 1974-75 school year was lower than the two previous years. Extraneous conditions (economic status, enlarged families, loss of funding) reduced the number of students as well as parents assisting the program for the 1974-75 school year.

Curriculum Areas

The children participating in the Cognitively Oriented Prekindergarten engaged in activities pursuing varied learning objectives. The program's activities were divided into two complementary sections: the general curriculum and the academic curriculum. The daily instructional program mentioned previously incorporated portions of both curricula on a regular basis.

The general curriculum contained the following areas: perceptual development, art education and physical education. The subject areas presented in the academic curriculum were reading, math, science, social studies, health and safety. Both the general curriculum and the academic curriculum for the Prekindergarten were essential for the positive development of the children in the cognitive, affective and psychomotor domains. Each curriculum area contained activities which were based on the children's identified

needs. Instructional goals and objectives were delineated with respect to what would be beneficial to the children in helping them to build sound educational foundations for continued developmental progress. Directions for implementation were specified for each curriculum area.

Following is a description of each section within the two curriculum areas and a brief discussion of the nature of the children's participation in each area.

General Curriculum

The general curriculum is designed to develop the perceptual and conceptual-language skills of the participating children. Learning objectives, activities and materials were developed on the theory that competence in sensory discrimination and integration lays a necessary foundation for the children's later conceptual-langauge learning and their facility in relating new ideas and experiences to previous ones. The development of skills presented in the general curriculum enabled the children to derive more from and better understand all the experiences to which they were exposed. Thus, many of the activities presented in the general curriculum prepared the children to better understand the concepts presented within the academic curriculum.

Activities in the general curriculum varied from those whose objectives were precisely defined and systematically reached to those whose principle goals were creative expression and free interaction with the environment. While many of the general curriculum activities were teacher directed, multiple opportunities were also included for child-initiated learning.

Through the varied activities and opportunities provided in the general curriculum, the children developed a greater ability to learn from and understand their experiences, a heightened awareness of their personal worth and

social responsibilities, greater mastery over their physical environment and means for creative expression.

The major areas of perceptual development, conceptual-language development, art education and physical education within the general curriculum are described below.

Perceptual Development. Increased sensory awareness was the aim of the perceptual development activities. The development of perceptual skills provided the basis for future learning.

Initially, the children learned to increase the accuracy and breadth of their sensory perceptions and discriminations. The children were first presented with tasks designed to aid them in recognizing gross differences between objects. The emphasis was on direct experience and manipulation of materials. The children eventually built their capacity to make progressively finer distinctions between things. As the children mastered the tasks of the curriculum, they developed greater awareness of differences and similarities they could see, hear, touch, taste and smell.

As the children developed competence in sensory perception and discrimination skills, they began to participate in activities designed to help them integrate the information received from their various senses. The Sensory Integration section of the curriculum helped the children strengthen their ability to bring all their sensory powers into play when they explored their environment. For example, a child was aided in constructing a fuller and more accurate concept of a drum as the child heard a drum sounded and was asked to point to the picture of the drum from a set of three pictures. Similarly, a child's concept of an apple became more precise as he first tasted and smelled a portion of the food and then was asked to integrate

these perceptions with a visual representation of an apple. Through learning these steps in this curriculum area the children were helped to coordinate information from various senses. This approach prepared the children to construct more precise concepts when they were involved in different areas of the curriculum or any other potential learning situations.

Hand-eye coordination was taught in conjunction with perceptual development. As the children were aided in coordinating hand and eye, they also increased the accuracy of their visual discrimination skills and small muscle control. Hand-eye coordination skills aided in developing the children's rhythmic eye movement which was essential for learning to see likenesses and differences in objects and print. These skills also aided the children's ability to keep their place on the page while viewing picture books and other visual media as well as aiding left-to-right progression habits. The hand-eye activities were presented in skill levels arranged hierarchically. For example, the skill of cutting was first presented by allowing the children to cut freely with paper. The children then learned to cut between two parallel lines and eventually to cut on a single straight line. The last level involved the difficult task of cutting on a circular line. Through these activities and others, the children increased their accuracy of coordinating hand eye and developed the strength and endurance of their small muscles.

Conceptual-Language Development. As the children built competence in perceptual development skills, the emphasis of the program gradually shifted to activities which supported vocabulary acquisition, development of concepts and growth of skill in relating these concepts to one another. The learning environment was carefully tailored to fit the children's previous development and present capacities.

The children were helped to increase their general vocabulary through direct teaching procedures and teacher elaboration of child-initiated speech. In direct teaching procedures, the teacher carefully planned an interesting experience, allowing the children to manipulate the materials as she provided them with verbal input about the particular objects presented. The teacher then asked the children for feedback, for example, the teacher asked, "Tell me about these things." The teacher then initiated a dialogue using various conversational techniques. The teacher would also elaborate on something a child said. A child might show the teacher a car and say, "See my car." The teacher might then say, "You have a big red car." Teacher input required a sensitivity to the children's interests and levels of development.

Utilizing the two teaching procedures described above, the children were also introduced to the names of concepts they had learned to recognize and discriminate, such as colors, shapes, sizes and relationships. The children learned how to communicate their perceptions.

An important element in aiding the children to develop language skills was the teacher herself. The teacher served as a language model for the children and was responsible for exhibiting proper English usage in her spoken speech. It was important for the teacher to project enthusiasm in her voice. The emphasis was on repetition of spoken speech on the part of the teacher. In this way, the children not only increased their general vocabulary but increased the accuracy and maturity of their speech as well.

Relationships between objects and events were also explored in the conceptual-language section. Classification, association, opposites, sequencing, spatial relationships, same and different concepts and dimensional relationships

were the concepts studied. Given a set of three pictures each representing a different type of hat, the children learned to associate the pictures and communicate the concept, i.e. "They are all hats." The children also learned to arrange a set of cards each representing a part of a complete sequence of thought or action in correct sequential order from left to right. Materials and situations selected for use in the learning activities designed to present relationships were familiar to the children's understanding of the varied links which can relate one thing to others was facilitated.

Art Education. The art education section of the General Curriculum consisted of an activities file. Art activities were pursued on a regular basis in the Prekindergarten in order to provide the children with a means of exploring and discovering their potentials in creative expression. The activities also provided a creative outlet for the children's ideas and perceptions. Scribbling with crayons, tearing and cutting paper, brush and finger painting were in themselves delightful and enjoyable for the children. A large variety of materials and methods were employed in the art activities. The children were given time to discover new potentials in their efforts and were given opportunities to discuss what they had done. Both teacher-directed and free-expression situations were utilized. The development of small motor control and hand-eye coordination were also aided through these activities.

Physical Education. The objectives of the physical education section of the curriculum were implemented in a set of sequential skills ranging from simple to complex. Each skill area contained a series of activities appropriate for the learning of that particular skill. The sequential

development of the activities followed and supported the sequence of the children's developing motor control. The various activities presented aided the children in developing muscular strength and dexterity and subsequent control of their body movements. The development of muscular control and coordination also contributed to the children's development in the areas of social, affective and cognitive growth.

Academic Curriculum

The areas of the Academic Curriculum were reading, math, science, social studies and health and safety. Although the Academic Curriculum could be used apart from the General Curriculum, many of the skills and concepts presented in the Academic Curriculum were based on the learnings undertaken in the General Curriculum. The development of sensory perception and discrimination skills and conceptual-language skills presented in the General Curriculum facilitated the children's understanding and learning of activities and tasks presented within the academic subject areas.

The Academic Curriculum was a very important part of the total Cognitively Oriented Prekindergarten program. Reading and math skills were developed sequentially and were taught on a daily basis. Although activities in these two skill areas were largely teacher-directed, the emphasis was on active participation and manipulation of materials by the children. Science, social studies and health and safety concepts were developed through teaching units. Provisions were made for the children to produce free responses. Learning in all five areas was conducted through a variety of settings using multiple instructional techniques.

Reading. The reading curriculum of the Cognitively Oriented Prekindergarten was a sequential, developmental and teacher-directed program. A whole-word approach was utilized in beginning systematic reading instruction. The instructional program consisted of reading readiness activities, formal reading instruction and extending activities.

The reading readiness activities were designed to prepare the children for formal reading instruction and introduction to the reading vocabulary. The readiness activities implemented during the 1974-75 school year were the same as those used during the previous two years of operation. The readiness activities incorporated many of the perceptual and conceptual-language development skills presented in the General Curriculum. The children participated in pre-reading activities designed to develop the following skills: directionality, visual and auditory discrimination, sequencing and association and classification relationships. The amount of time used in implementing the reading readiness activities varied between the two sessions of the Prekindergarten program. The children attending the morning session of the Prekindergarten required a longer readiness period than those children attending the afternoon session because they had received no formal readiness training as participants in the home program phase of the Early Learning Program. Although the time required for readiness activities varied among the children in the afternoon session, many of the children were ready for formal reading instruction after a brief review of the readiness activities. Many of the children participating in the afternoon session of the program had completed the reading readiness portion of the curriculum while enrolled in the center phase of the Early Learning Program. Although the time spent on reading readiness training varied between the two sessions

of the Prekindergarten, the activities remained the same for both sessions and were presented in small group learning situations.

The formal reading instruction implemented during the 1974-75 school year represented a revision over the procedure utilized during the 1973-74 year of operation. During the 1974-75 school year, formal reading instruction and introduction to the reading vocabulary were conducted in the Total Environment Room (TER). The TER was a cylindrical structure which allowed the projection of audio-visual devices on the inner walls from outside the structure. In using the TER, three slide projectors were employed for presenting the reading words.

In beginning the formal reading instruction, the children were first introduced to four base words which formed the foundation of the reading instruction. The children worked individually or in small groups of two or three children in the TER. A word symbol for the particular base word being presented was first projected on the screen. The children were given an opportunity to respond. The word symbol was replaced by a picture representing it and then the word symbol was again projected. The pictorial representation served to reinforce the correct identification of the word symbol. As the word symbol was projected for the second time, the children were encouraged to identify the word orally. If they were unable to correctly respond, the picture was projected again and then the word symbol was shown. This process was repeated until the children were able to associate picture to word symbol and correctly identify the word symbol. The same procedure was used in presenting the remaining three base words.

When the children mastered the identification of all four base words, they were ready to begin formal reading instruction for the remaining reading

words utilizing the whole word approach. This instruction was also carried out in the Total Environment Room. Each new word on the reading list was introduced in the context of a three-word phrase with two other words with which the children were familiar. All three word symbols were presented on slides in left to right sequence. The children were asked to identify the new word symbol along with the other two word symbols using contextual clues. A picture representing the new word symbol was then presented in place of the word symbol thus reinforcing the identification of the new word. The word symbol for the new word was again presented and the children were asked to read the words in temporal sequence from left to right. If any child was experiencing difficulty in identifying a particular word symbol in the phrase, a picture representing that word was projected and the word symbol was reshown. This procedure was repeated until the child was able to correctly identify all three words in the phrase. The teacher then offered oral reinforcement. For example, after the children read the phrase "boy sit chair" correctly,the teacher responded, "Good. The boy is sitting on the chair." The teacher also asked questions to check the children's understanding of the phrases they read. For example, the teacher would ask, "Who is sitting on the chair?" or "What is the boy doing?"

Eventually, the children began to model the responses of the teacher and were able to translate a simple three-word phrase into a complete sentence using the auxilary words needed. The reading vocabulary consisted of only nouns and verbs because these word forms were more familiar to the children and easier to comprehend. The children demonstrated little difficulty in identifying the auxilary words and capitalized forms of the formal reading words when visually introduced to these words in program-developed reading books at later stages of the reading program.

The formal reading instruction procedure described above differed from that used during the 1973-74 school year. During the 1974-75 school year, all new reading words were introduced within the context of a simple phrase as opposed to being introduced singly as in the previous year of operation. All formal reading instruction was conducted in the Total Environment Room for the 1974-75 school year which constituted an operational difference over the previous year.

By introducing new reading words in phrases during the 1974-75 school year, it was found that the words took on more meaning for the children. Simply learning a list of individual reading words did not build as effective a foundation for beginning reading. The emphasis was on the comprehension of word combinations which is essential in the process of reading. In addition, by introducing new words in phrase form, the recognition of those words previously introduced to the children was constantly being reinforced as well.

The purpose of using the Total Environment Room for formal reading instruction was to completely control the environmental setting of the children. Thus, external distracting situations were eliminated and the children's concentration on the relevant stimuli was enhanced.

The Prekindergarten staff found the revised instructional procedure for the 1974-75 year a more effective procedure for beginning reading instruction.

The children participating in both sessions of the Prekindergarten program during the 1974-75 year received the same formal reading instruction. This also differed from the previous year at which time two different approaches were utilized. During the 1973-74 year of operation, the children

attending the morning session used the Lippincott phonics series to beginning reading while the children participating in the afternoon session used the project-developed whole word approach. The Lippincott series was implemented during the 1974-75 school year primarily as a supplement to the formal reading instruction program. Approximately one half the children in both sessions used selected activities and materials from the Lippincott series to supplement their beginning reading skills. The children who used the Lippincott materials were selected at random.

The extending activities used to reinforce the children's identification of reading words learned in the Total Environment Room were similar to those used during the two previous years of operation. Activities designed to reinforce phrase identification and comprehension were added. The children were grouped homogeneously according to ability into three groups for the extending activities These groupings remained flexible throughout the school year responding to the children's changing needs and levels of development. Extending activities were conducted during the small group sessions period. Evaluation of the children's performance in the reading program was systematically recorded.

Math. Mathematical concepts are an important part of the children's environment. The math curriculum was designed to help the children learn to deal with the various mathematical concepts with which they were confronted. The curriculum consisted of a set of highly structured units. The program was teacher-directed although the children were encouraged to participate actively in the learning tasks. The children were given multiple opportunities to manipulate materials based on the rationale that children learn by doing.

Each unit of instruction,or lesson, was concerned with one basic math concept. The lessons were presented in a hierarchical sequence. The children were required to complete the criterion step of one unit successfully before going on to the next. The lessons were presented in individual learning situations. The children progressed at their own rate of speed, spending as much time on a particular lesson as necessary. The language used to explain the task to the children was simple and clear. Those children unable to respond verbally to the criterion task were encouraged to respond using a non-verbal method such as printing. In this way, children slower to develop language skills were not hampered in developing mathematical concepts. The children received praise for a job well done.

The children learned to deal with quantitative measures, qualitative measures, numerals, numbers, and sets of items. The children learned to make simple qualitative and quantitative comparisons such as "the same," and "not the same." Through manipulation of sets of objects and numerals the children were able to identify sets and assign numerals that appropriately represented the quantitative contents of those sets. Through relative quantitative comparisons of different sets, they were able to specify whether a set was more than, less than or the same as another set. The understanding of this trichotomy was accompanied by an understanding of the corresponding symbols used($>$, $<$, $=$). The children were also able to demonstrate an understanding of one to one correspondence through matching tasks.

The later lessons of the math curriculum were concerned with the mathematical operations of addition and subtraction. The children learned to

perform these operations based on their understanding of sets. For example in the operation of addition, the children learned that a given known set plus one more created the new quantity. The reverse of this paradigm illustrated the operation of subtraction. The children learned to identify the corresponding mathematical symbols.

Reinforcing activities were presented in small group sessions. These activities served to extend the children's understanding of the mathematical concepts presented in the individual instructional units. These activities also provided a means for the children to continually review learned concepts. Ongoing records were kept on the children to evaluate their progress within the individual units of the math curriculum.

Science. Children are curious and inquisitive about their physical and biological environment. The Prekindergarten science program was designed to help children explore and discover their environment through active interaction with their surroundings. The science program provided the children with a variety of planned encounters with scientific phenomena in the world that surrounds them. The lessons were designed to present a diversity of scientific experiences for the children.

The emphasis was on exposing the children to experiences designed to increase their awareness and appreciation of the world of science.

The program was designed to guide and refine the children's basic observational skills. The development of sensory perception and discrimination skills was an important prerequisite. The children were then helped to improve their ability to describe and explain natural and physical phenomena that they observed. Once the children had mastered these basic skills necessary for effective exploration of the environment, specific experiences were presented.

The children manipulated objects and magnets to determine which objects the magnet attracted. They classified the objects accordingly. By melting an ice cube on a stove the children witnessed the transformation of the ice cube to water. Actually observing the process was a more effective way of learning the concept as opposed to simply being told about the different forms of water. As the children watched their planted seeds grow and observed the hatching of chick eggs, their understanding of the concepts of life and growth became clearer. By watering their plants and feeding their goldfish, the children were able to see the necessity of water, sun, soil, food and care for developing and perpetuating life. Through observation and discussion, the children learned about the four seasons and became aware of the changing weather conditions. The children also learned that the seasons and corresponding weather conditions have an effect on the way people dress, play, work and feel.

The lessons presented in the science program were unified by their intent to begin the development in each child of a particular way of approaching his environment through observing, manipulating and generalizing.

Social Studies. Developing within the children an awareness of their relation with the community as a whole was an important goal of the social studies program. The children were aided in developing an understanding of their immediate environment of family, neighborhood, town and community. The social studies program provided the children with first-hand experiences and activities that allowed them to deal with and relate to their immediate social environment.

The activities of the program were organized into six units of instruction: community helpers, transportation, family living, city living-farm

living, people in other lands and holidays. The community helpers unit introduces a variety of personages in the community who were responsible for providing important social services such as the doctor, dentist, fire fighter, police officer and sanitation worker. The children learned about the important role that each community helper plays. The children also learned to identify their role in the community and the ways they could help others around them. The transportation unit included the study of several important modes of transporting goods and people, stressing the value of transportation to the community and the individual. A deeper understanding of family members and family roles and responsibilities was encouraged by the family living unit. The children came to see themselves as important members of the family and learned to work more effectively with others in the family. The city living-farm living unit exposed the children to wide alternatives in living styles available to people, regardless of which type of environment they lived in. The children were also helped to see and understand that children living in other parts of the world live differently than themselves although they require the same basic needs of survival, food, clothing and shelter. The children learned some of the traditions of the culture in which they lived through learning about and participating in celebrations of important holidays.

Health and Safety. In order for the children to more fully understand their relationships to others and to the environment, the children had to first develop a better understanding of themselves as individuals. The health and safety program was designed to do just that. Initial stress was placed on helping the children develop positive self-concepts. A child who holds a negative image of himself is unable to fully develop his potential.

Thus, the children were helped to increase their awareness of themselves as unique individuals. Activities and materials were designed to aid the children understand their feelings, both positive and negative. Group situations and role-playing activities helped the children to work more cooperatively with one another.

The health and safety program was centered around the children and their role in maintaining healthy environments for personal development. The children learned the importance of personal grooming and cleanliness. They demonstrated their ability to wash their hands and faces, brush their teeth and comb their hair. They learned that proper diet, rest and exercise were important to ward off common colds.

As the children observed the changing of the seasons and the accompanying changes in weather, they learned to dress appropriately. Hand-eye coordination and small muscle control were also developed as the children practiced zipping, buttoning and snapping their outdoor clothing.

The importance of safety in the home, school and on the playground was also emphasized. The children helped the teacher to establish classroom safety rules such as no running, carrying scissors properly and staying away from electrical outlets. By enforcing these safety rules and others, the children were better able to understand the importance of safety.

The health and safety program then formed a basic framework, a start-point from which the children began to understand, value and seek to maintain a healthy and safe environment for their future growth and development.

EVALUATION

Evaluation of the 1974-75 Prekindergarten program year consisted of a subjective assessment of the strengths and weaknesses of the program as perceived by the participating teachers as well as an objective assessment of program effects on the participating children as measured by standardized tests.

Program Strengths

The experience derived from the two previous years of operation contributed to the overall success of the Cognitively Oriented Prekindergarten in the 1974-75 school year. Staff assessment and evaluation of previous Prekindergarten years led to subsequent curriculum revisions designed to better meet the needs and levels of development of the participating children.

The academic curriculum areas of reading, science, social studies and health and safety were revised to present more effective instructional procedures. Although the reading program continued to implement a whole word approach to beginning reading, the procedure for introducing new words was revised. During the 1974-75 year of operation, all new words were introduced within the context of a three-word phrase with two other words with which the children were familiar. Thus, there was a natural shift in emphasis to reading for meaning. This represented a strength over the two previous years of operation at which time words were introduced singly and then later combined into sentences. The children participating in the reading program in the 1974-75 school year demonstrated an increased ability to comprehend what they read. Reading took on more meaning for the children. In addition, reading words previously learned were constantly reinforced

through usage in the three word phrases. This revised reading procedure proved to maintain a high-interest level on the part of the children.

The Prekindergarten science program was also revised. Many lessons were extended to include additional activities and materials. The addition of criterion tasks and questions facilitated the evaluation of the children's understanding of the concepts presented. Lessons on conservation and pollution of natural resources were added to reflect current issues in the world of science today. The lessons used in the science program placed greater emphasis on the development of observational skills and descriptive techniques. Thus, the children were better able to extend their understanding to new learning situations.

Four teaching units were added to the two previously established units of community helpers and transportation within the social studies program. These teaching units were holidays, family living, city living-farm living, and transculture. The addition of these units provided the children with a well-rounded introduction to social studies concepts. Thus, the social studies curriculum reflected a natural continuum of social awareness from the study of the home and community to the study of farm and city living and eventually to the study of people in other lands. The revised program was considered to represent a program operation strength over previous years.

The lessons within the health and safety program were reorganized during the 1974-75 school year. The lessons were organized into five units of instruction: self-concept, personal grooming, dressing for weather, nutrition and safety. This proved to be a more effective way of relating information and concepts to the children. Although the development of positive self-concepts on the part of the participating children was always

a point of emphasis of the Prekindergarten program, the 1974-75 year of operation was the first time a formal instructional unit on self-concept was implemented. Multiple activities and materials were used to help the children become aware of themselves as unique individuals. The children learned to identify and express their feelings, both positive and negative. The children also learned to cooperate more effectively with one another. This proved to be an important factor in small and large group learning situations. The children demonstrated an ability to function and thus learn more effectively in group experiences.

Although the math curriculum was not revised for the 1974-75 school year, the teachers arranged the daily instructional program to allow more time for individual work in this area. All lessons were introduced in individual learning situations and later reinforced in small group activities. This procedure represented an advantage over the previous two years of Prekindergarten operation at which time many of the math concepts were introduced in small group sessions. Individual instruction in the area of math allowed the children to progress at their own rate of speed and facilitated the evaluation of pupil progress in this area.

The 1974-75 Prekindergarten year of operation was the first year that the completed manual for the general curriculum was utilized. The Prekindergarten teachers found the manual extremely useful in implementing the curriculum. The structured lessons and accompanying activities and materials facilitated program operation. Student assistants were better able to carry out small group activities by referring to the manual. Thus, the children's perceptual and conceptual-language learning was positively developed. The hand-eye coordination section of the general curriculum was revised for the 1974-75 school year. The activities in this section were organized into five

skill levels. Each level represented a variety of tasks which required approximately equal degrees of motor skill and hand-eye coordination. In learning to manipulate a writing utensil, the children first learned to draw lines, then to draw lines, then to draw circles and then to draw lines from left to right. The progression of skills eventually led to the ability to tracing single line figures and printing alphabet letters and numerals. The study of dimensional relationships was added to the conceptual-language section. Volume and conservation, and two dimensional vs. three dimensional concepts were introduced.

Curriculum revisions and reorganization and the utilization of curriculum manuals constituted program strengths for the 1974-75 year of operation.

The previous experience of the two Prekindergarten teachers also contributed to the success of the program. Both the supervising teacher and associate teacher had taught in the Prekindergarten previously. Their understanding of the nature of the program and their expertise proved invaluable in meeting the needs of the children and carrying out the operational procedures of the program. The cooperative efforts of these two teachers contributed in no small measure to the success of the 1974-75 operation of the Prekindergarten.

By far the most significant strength of the Program was its overall effectiveness in meeting the principal educational objectives. The Prekindergarten was designed to resist any tendency toward regression of those developmental gains achieved by the children in their two previous years in the Early Learning Program of the PRIDE Project. Such gains were achieved in the areas of intellectual development, language development, social development, reading achievement and mathematics achievement. The

Program successfully forestalled educational regression in these areas and at the same time successfully provided for the continuous development over and above these gains in order to adequately prepare them to compete within the formal school system.

The children demonstrated significant gains in the area of intellectual development. The children increased their ability to more accurately perceive and discriminate sensory stimuli. As the children learned to identify finer distinctions between objects, their ability to coordinate information from the various senses increased. For example, given a tactile impression of a hidden object, the children learned to integrate this perception with a visual component of the object by selecting the picture which represented the object felt. Perceptual integration activities aided the children in constructing fuller and more accurate concepts when they were involved in potential learning situations. This learning laid a necessary foundation for the children's conceptual-language development. Children increased their facility in relating new ideas and experiences to previous ones. They learned to perceive such relationships as classification association, opposites, spatial relationship, sequencing and dimensional relationships. They came to understand the many ways in which objects and events may be related to one another. Concepts introduced in the curriculum areas of science, social studies and health and safety served to strengthen the children's increasing intellectual development.

Language development was an integral part of the entire Prekindergarten program. Although activities designed to increase language development were implemented in all areas of the curriculum, the conceptual-language section of the general curriculum was designed as a guide for developing specific conceptual-language skills. The children were helped to increase

their general vocabulary through teacher-directed activities and teacher elaboration of child-initiated speech. The names of concepts the children had learned were also taught. They learned the names of colors, shapes, sizes and relationships. The children were aided in utilizing descriptive words in identifying common objects and in verbally expressing their ideas concerning these various objects. Emphasis was also placed on increasing the accuracy and maturity of the children's speech. The teachers served as important language models in this capacity.

The participating children successfully maintained and extended their previous gains in the area of social development. The children were helped to recognize the importance of themselves as unique and worthwhile individuals. They learned to better understand their feelings and emotions and to express them more effectively. The learning tasks of the program were designed to insure the children initial success in their endeavors and thus helped to develop the children's self-confidence and self-respect. The children also learned to respect others as unique individuals. Small and large group learning situations encouraged the children to work cooperatively with one another.

The children demonstrated successful achievement in the area of reading. Many of the children were able to identify up to thirty-four reading words. They were also able to identify the reading words as they were presented in three-word phrases. But most important the children demonstrated the ability to comprehend what they read. Frequent comprehension checks of phrase meanings indicated that many of the children had little difficulty understanding the phrases they read. Towards the end of the year, children were able to translate the three-word phrases into complete

sentences using the appropriate auxilary words. They participated enthusiastically in the extending activities designed to reinforce the identification of reading words and phrases. Some of the children were able to complete the extending activities independent of teacher assistance. Those children who had been selected to receive a supplementary phonics instruction showed significant gains in this area as well. Of these children, many were able to identify up to ten consonant letters by the sounds these letters made. They were able to match these consonant sounds to pictures of objects beginning with the same sounds. The program successfully laid a foundation for beginning reading using a whole-word approach.

In the area of mathematics achievement, the children successfully resisted educational regression of previous gains and maintained continuous progress in this area of their overall development. The Project designed math curriculum was implemented in both the morning and afternoon sessions of the Prekindergarten. The children learned to make simple qualitative and quantitative discriminations, such as "the same," "not the same," "same number," etc. Many of the children were able to demonstrate an understanding of the trichotomy, more than, less than and equal to or the same as. In addition, many were able to use the corresponding mathematical symbols correctly (> ,< , =). The children were able to determine the number of objects in a set up to the set of ten objects, including the empty set. Matching numerals to corresponding sets of objects was another mathematics gain achieved by the participating children. The children's ability to copy mathematical patterns and match one-to-one correspondence was also facilitated. Several children were ready to begin the operations of addition and subtraction. Sets were utilized in beginning these basic computational

skills. Many children were rote counting from one to twenty, and others were rote counting up to thirty and forty.

By enabling the participating children to successfully resist any tendency toward regression in the areas of development and achievement presented above and, at the same time, enabling them to exhibit significant gains in these areas over the program period, the Cognitively Oriented Prekindergarten demonstrated its most significant strength. The Prekindergarten Program also facilitated the children's attainment of a second major objective: the successful demonstration of a final level of development or achievement in the specified areas at or above the normal level for children of the same age. This accomplishment proved to be an important strength of the Prekindergarten Program in that it aided in preparing the participating children for effective competition within the formal school system. Refer to test results for further information.

The Prekindergarten program location at the Learning Research Center on the campus at West Chester State College also constituted a program strength for the 1974-75 school year. The location on the college campus proved convenient for those student assistants assigned to work with the Prekindergarten through the work study program. Consequently, the student assistants were able to fulfill their scheduled hours more reliably. The facility at the Learning Research Center was easily adapted to meet the physical needs of the program. The teachers were able to arrange the physical environment of the large room to meet program objectives and the needs of the children. Areas were set aside for individual instruction, and small and large group learning sessions. The carpeting enabled the teachers and children to hold many informal learning sessions and discussions

while seated on the floor. The classroom itself was located near the children's lavatories and thus the children were often able to go to the bathroom independent of teacher assistance.

The location at the Learning Research Center provided excellent learning facilities. The Total Environment Room was easily accessible and all the children enrolled in the Prekindergarten were given opportunities to participate in activities in this facility. The teaching machines center was also available to the Prekindergarten. Several children had the opportunity to work with programmed materials with individual tutors from the Learning Research Center. The Prekindergarten had convenient use of excellent audio-visual materials from the Educational Media Office of West Chester State College in addition to the use of books and instructional kits from the curriculum and children's libraries.

Through the cooperation of the Learning Research Center staff, the Prekindergarten children were able to participate in various school functions and experiences. The school nurse allowed the teachers to borrow materials for the health and safety program. The children were invited to see puppet shows and plays presented by other grades. Thus, the children's background of experiences was expanded.

Parent interest and cooperation contributed to the support and success of the Prekindergarten program for the 1974-75 school year. Parents were informed of program operations and individual student progress through the use of a newsletter and frequent telephone conversations. Parents were encouraged to visit the program at any time and to offer suggestions and ask questions. At the end of the school year, parent

evaluation interviews were conducted to provide the staff with feedback concerning the parents feelings of the success of the program.

In summary, the Cognitively Oriented Prekindergarten for the 1974-75 year of operation demonstrated outstanding program strength in the following four important areas: experience derived from the previous year of operation and subsequent curriculum revision and reorganization to better meet the needs and levels of development of the participating children; overall effectiveness in enabling the participating children to attain the major objectives set forth by the program in the areas of intellectual development, language development, social development, reading achievement and mathematics achievement; efficient use of classroom facilities and program location to best carry out the instructional program; and the establishment of communication lines with parents and subsequent parental support.

Program Weaknesses

Throughout the three years of operation of the Cognitively Oriented Prekindergarten, several problems and difficulties have arisen in the area of program operation and implementation. These difficulties were minor in view of the overwhelming success of the program in meeting principle objectives.

The 1974-75 school year represented a culmination of experience. Weaknesses identified during the two previous years of operation were successfully resolved during the 1974-75 year due to the previous experience of the Prekindergarten staff in dealing with such difficulties. Curriculum weaknesses apparent in previous years were effectively resolved through the efforts of the staff to continually evaluate and revise or reorganize the curricula. The revisions were based on three years of observation of children's abilities, interests and needs. The curriculum was carefully tailored to meet the needs and levels of development of the participating children. The instructional program was designed to accomodate the needs of each child and each child to progress at his own rate or learning. Thus, the curriculum program was effectively adapted for use with children of varying levels of development. The curriculum for the 1974-75 school year was considered a program strength and presented little or no difficulties or problems.

The experience of the Prekindergarten staff facilitated the effective implementation and operation of the program. Operational procedures, such as ordering food and materials, arranging for transportation and scheduling the work hours of student assistants were carried out with fewer difficulties over the two previous years of operation.

Although the rising cost of living continued to have an effect on the operation of the Prekindergarten program, particularly concerning the decreased number of student assistants assigned to the program, the Prekindergarten staff was able to minimize this effect through careful instructional planning.

In general, the Prekindergarten program for the 1974-75 year of operation demonstrated little or no weaknesses in the area of program operation and implementation. This can be attributed to the experience and understanding derived from the three years of the program's operation.

Test Results

In terms of a more objective assessment of the success of the Prekindergarten Program, a battery of tests was administered on a pre- and posttest basis, that is, immediately preceding and following the program year. Tests were administered in the areas of intelligence and language development, as well as reading and mathematical skills. Following is a list of specific tests used:

1. Slosson Intelligence Test (SIT)
2. Peabody Picture Vocabulary Test (PPVT)
3. Preschool Assessment of Reading Test (PAR)
4. Preschool Assessment of Math Test (PAM)

Results of third-year testing are presented in Table 1. Mean pretest, posttest and gain scores for each test measure are listed. The results of correlated t-tests between pre- and posttest means were found to be statistically significant.

TABLE 1

Third-Year Test Results*

Test Measure	Pretest Mean	Posttest Mean	Mean Gain
SIT (MA in months)	48.60	61.68	13.08
PPVT (Language MA in months)	38.74	54.85	16.11
PAR (Per Cent)	1.83	19.78	17.95
PAM (Per Cent)	20.17	41.50	21.33

*Correlated t-tests between pre and post means were found to be statistically significant beyond the .01 level in all cases.

The mean gains exhibited in all areas by participating children in this program are substantial and greatly exceed the normally expected growth rate for the pre-post testing interval which would be approximately seven months. These gains are all the more impressive when one realizes that the Prekindergarten was only in session for 103 days over that seven-month period, or roughly for one-half of the time.

On the basis of this year's success and successes in each of its two previous years of operation, the Prekindergarten Program has currently undertaken an effort to disseminate through information packets and diffuse through training workshops the basics of its successful practices.